



# ANNUAL REPORT

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**2019**  
EDITION



## OFFLINE ON THE RADAR

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In 2019, more people started coming to terms with the fact that the world was hitting a plateau in relation to connectivity. The number of users with poor or no internet access barely changed and remained at about 4 billion (or 50% of the world's population).

For Kiwix this meant increased recognition in the form of awards and speaking opportunities. But as the saying goes; “One can either work, or talk about one's work”. And so we were invited this year to speak at a couple of global conferences. It was nice.

## AND EYES ON THE MISSION

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But even though we are grateful for the opportunities given to us by WISE and hundrED, we remain focused on our mission: to bring online content to people without internet access.

To this end, we have continued to work on what people want: better, simpler and more reliable products. We have improved all of our platforms (Android, desktop and hotspot) and released a new zimfarm that finally allows us to update all of our content on an industrial scale.

2019 was, indeed, a good year.

# Facts & Figures

3 to 4 million users worldwide - where are they?

## Top 5

Countries and regions with the most downloads

### Mobile

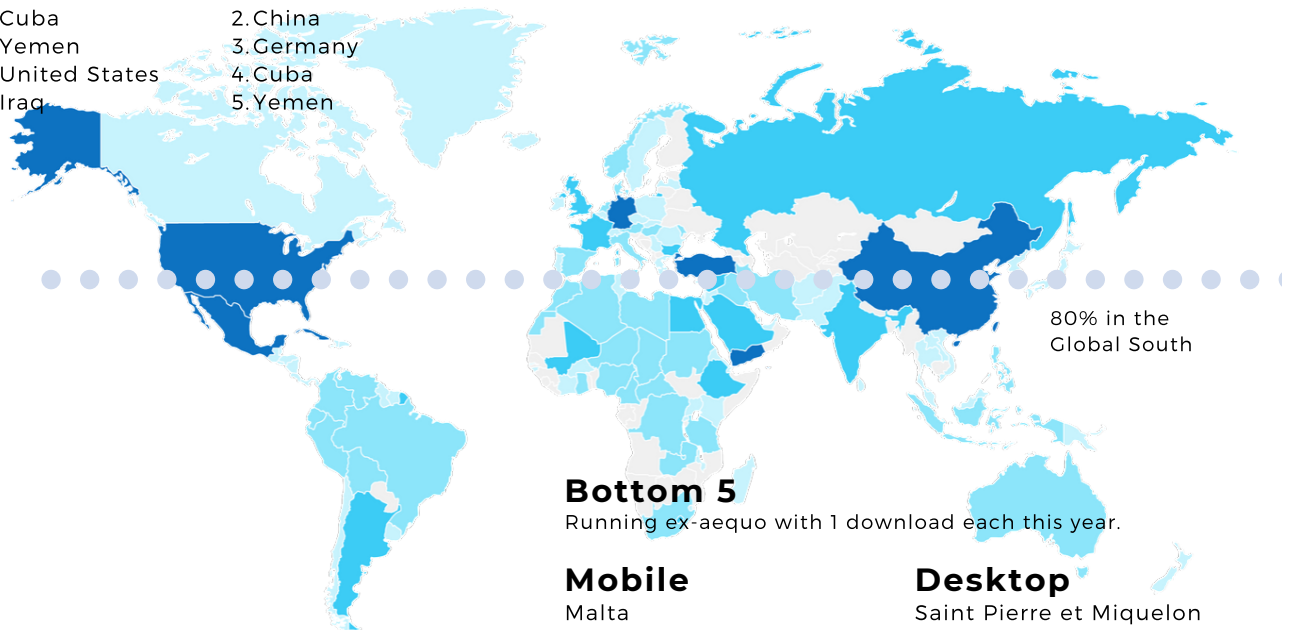
Total 600,000 downloads

1. Mexico
2. Cuba
3. Yemen
4. United States
5. Iraq

### Desktop

Total 1,050,000 downloads

1. United States
2. China
3. Germany
4. Cuba
5. Yemen



### Bottom 5

Running ex-aequo with 1 download each this year.

#### Mobile

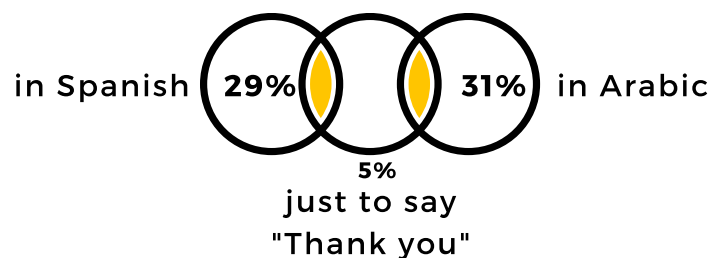
- Malta
- São Tomé and Príncipe
- Eswatini
- Turks and Caicos
- St Vincent & Grenadines

#### Desktop

- Saint Pierre et Miquelon
- American Samoa
- Vatican City
- Falklands
- Turks-and-Caicos

# Feedback

In 2019 we were contacted by 3,849 of our users



"Gracias por crear una aplicación tan maravillosa. Me ayuda mucho con las tareas de buscar información de mis hijas."

"شكراً برنامج أكثر من رائع جدا شكراً لكم على هذا"

"M'agrada Kiwix! Els coneixements humans sencers a la mà allà on vagis!"

"We've spent the last 10 years sailing around the world as a family. Having access to Wiki offline has been a huge resource for us."

"Очень крутое приложение для учеников. Жаль, когда я был в школе у меня такого не было"



"How does it impact children who have never experienced the internet? They love this kind of learning, it rebuilds cultural pride to see "Ladakh" within Wikipedia."

Cynthia Hunt  
HEALTH Inc and the HELP Fund

# Wikipedia selections

## Rethinking user's first contact with encyclopaedic content



Generating ZIM files off Wikipedia has always presented us with two issues:

- Size, of course, as archives can be pretty big (thus making direct download a challenge).
- Language. How do you make a landing page that is meaningful and useful for users whose language you can't speak or write?

The first issue we had started solving in 2017, with the first release of Wikimed: for students in Health Sciences, it made sense to have a medical encyclopaedia focused on medical content. But nothing, in fact, prevented us from releasing similar selections dedicated to History, Geography... or Basketball.

We then realised that in order to make the first interaction with these new selections more interesting it would be wise to look at... Wikidata. The sister project neatly compiles all of Wikipedia's entries and all the relevant facts about them - starting with their spelling in each language and which image(s) can be used to illustrate those entries.

The next step was to simply compile selections and take the 100 most frequently viewed articles and use the Wikidata-selected images to build a tiled landing page. Each selection now offers a sleek, compelling landing page, with a list of articles whose title is in the correct language. No more clumsy Google translations, no more guessing what to share.

New selections released this year included Geography, History, Maths, Physics, Chemistry, Molecular Biology, Football, Basketball, and Cricket in more than a dozen languages. The largest Wikipedias also saw the release of a "Top" selection with the 50,000 most read articles.



More content, more often.

The screenshot shows a dashboard with a navigation bar containing 'TODO', 'DOING', 'DONE' (highlighted in blue), and 'FAILED'. Below the navigation bar, it says 'Showing max. 200 out of 4310 results'. The main content is a table with four columns: 'Schedule', 'Completed', 'Worker', and 'Duration'. The table lists various tasks such as 'granbluefantasy\_en\_all', 'wikipedia\_arz\_all', 'wikisource\_he', etc., along with their completion times and the worker responsible.

Schedule	Completed	Worker	Duration
granbluefantasy_en_all	2 days ago	athena18	3 hours
wikipedia_arz_all	2 days ago	mwoffliner5	14 hours
wikisource_he	2 days ago	protocol	4 hours
phet_mul_all	2 days ago	athena18	an hour
vikidia_it	2 days ago	pixelmemory	5 hours
wiktionary_ts	16 hours ago	sisyphus	a minute
wiktionary_de	16 hours ago	sisyphus	2 days
wiktionary_ku	17 hours ago	mwoffliner5	7 hours
osm-wiki	20 hours ago	athena18	13 hours

Screenshot of the ZIMfarm dashboard

Updating ZIM files used to be a real labour of love: each scraper had to be manually started, and the resulting file transferred to the Kiwix library. This was already hard to manage when we had several hundred zim files in our catalogue, but with several thousands it simply had become a daunting -and tedious- task.

Things changed for the better in 2019 with the advent of the ZIMfarm. To be honest, it resembles more a ZIMfactory than a farm: almost a dozen servers located around the world and running 24/7, all year round to automatically update every single one of the more than 4,000 files we provide every day to millions of users.

Recipes (scripts used to copy a given type of website structure, e.g. mediawiki or Youtube) are easy to clone, making it much easier to aggregate new content: this is the logical next step that will allow us to grow our catalogue ever more quickly and offer more choice to everyone, in their own language.

The ZIMfarm now manages almost 1,200 recipes for as many websites (some of them come in various flavours, e.g.. with or without images), producing nearly 5,000 updates every month or so.

And because we are committed to openness, all farm operations are viewable here: <https://farm.openzim.org/>

# Hackathon

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Stockholm, Sweden, August 9-18, 2019



The annual Kiwix hackathon is a week-long event where the most active volunteers can focus on completing their top project.

This invitation-only event helps give the final push before releasing new updates. It is also a great team-building opportunity and of course a good way to show our appreciation to the most committed developers for both Kiwix (the platform) and OpenZIM (the file format that allows websites to be read offline).

This year's Hackathon was held in Stockholm and took place next to Wikimania, the Wikimedia Movement's annual gathering. 10 participants from Switzerland, France, India, Mali, the UK and the US met for 9 days of non-stop coding.

Projects covered and where significant achievements were delivered:

Kiwix:

- Kiwix- Android
- libkiwix
- Kiwix-hotspot
- zim-quarantine

Openzim

- libzim
- zim-tools
- zimwriterfs
- MWoffliner
- WPI engine
- Gutenberg scraper
- Zimfarm

The full summary of goals and achievements can be found here:

[https://wiki.kiwix.org/wiki/Hackathon\\_Wikimania\\_2019](https://wiki.kiwix.org/wiki/Hackathon_Wikimania_2019)

# Hotspot cardshop



## Superpowered installer

General Branding Content 26.94 GB - 32 GB (3.52 GiB free) Update Configuration

### Interactive Tools

EduPi (10 MiB)  Share arbitrary files with all users  
EduPi Resources

Nomad android app (50 MiB)  Révisions du CP au CM2

Math Mathews android (50 MiB)  Un jeu pour réviser les maths

Aflatoun (3.67GiB)  Education Platform for kids

Khan Academy FR (11.35GiB)  Learning Platform (French)

Khan Academy EN (47.68GiB)  Learning Platform (English)

Khan Academy ES (22.11GiB)  Learning Platform (Spanish)

WikiFundI FR (2.92GiB)  Wikipedia-like Editing Platform (French)

WikiFundI EN (3.2GiB)  Wikipedia-like Editing Platform (English)

### Static Content Packages

Available ZIMs Bhojpuri

Name ↕	Size
📄 विकिपीडिया offline version of Wikipedia in Bhojpuri	91.93 MiB
📄 विकिपीडिया offline version of Wikipedia in Bhojpuri	20.78 MiB

Selected ZIMs

Name	Size
📄 Best of Wikipedia A selection of the best 50,000 Wikipedia articles	6.07 GiB
📄 أفضل من ويكيبيديا مجموعة مختارة من أفضل 50000 مقالة ويكيبيديا باللغة العربية	1.95 GiB

The cardshop's content selection dashboard

The first step towards building a Kiwix hotspot that could scale and reach more users consisted in sharing an easy to use installer. People with zero knowledge of command lines should be able to assemble the content they want and create a hotspot for themselves, their families, or entire schools. The first version of the hotspot installer was released in 2017.

But in order to build an image, one has to import the zim files first, and then assemble these into a coherent system within the Raspbian OS, Not exactly light work for a home computer. But since we had servers, we figured we could go the extra mile and spare users with the hassle. A simple online interface now allows them to pick the contents they like, no matter the language, and leave it to someone else to do the heavy lifting. A few hours wait and *voilà*, patrons get an email notification that a brand new, bespoke hotspot image is ready for download. A quick flash on to an SD card later, and it is ready for immediate use.

The roll-out of the cardshop is also a step in the right direction towards providing Kiwix with an independent, grant-free source of revenue, as access can be purchased either as a one-off for an individual, or as a subscription for larger entities who would like to generate a more diverse range of images or handle a high update rate: Because hotspots can reach so many people at the same time and require no install on the end users' part, they account for more than a third of Kiwix's reach, with over a million individuals impacted.

You can purchase your access here:  
<https://www.kiwix.org/en/cardshop/>

# More 2019 milestones

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Projects that really moved forward this year

## **Kiwix-Android 3.0**

A much-needed update to our code base, with an almost complete upgrade to Kotlin which resulted in performance improvement and a slightly improved UI. As a direct result, application crashes have been reduced by more than 30%. Android phones can also now work as hotspots, meaning that users can share content with their friends via Kiwix.

## **Kiwix-desktop 2.0 (beta)**

This project turned out to be much harder than we had expected but 2019 might have signalled the end of the tunnel. A series of beta versions were released for both Linux and Windows throughout the year so as to allow users to replace the ageing and deprecated Kiwix for desktop 0.9 (there's never been a version 1.0). Newer features will be rolled out with the final version in 2020.

## **Kiwix for iOS 1.10 and macOS 2.1**

Entirely and single-handedly managed by an awesome volunteer based in the US. The new releases fixed a bunch of bugs, as well as minor UX improvements.

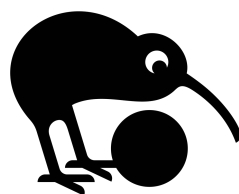
## **Kiwix-JS for Windows**

Another volunteer-led project, Kiwix-JS initially started as a browser extension so that people could directly open and read ZIM files from Firefox or Chrome. The technology was adapted as a standalone app for Windows. Kiwix-JS can actually run on older machines and 32-bit computers that have been off the market for over 10 years but are still largely used in many countries. Kiwix-JS for Windows also offers Wikimed and Wikivoyage custom apps.

## **Code coverage**

As part of our effort to increase software resilience, we introduced code coverage procedures for most of our repositories. In common parlance, code coverage is a procedure aimed at testing code before it is rolled out, thereby increasing chances of detecting software bugs.

# Thanks to our supporters



**And thanks to you!**

Support our mission with a donation <https://support.kiwix.org>  
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